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**Katz**

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(54) **METHOD OF IMPROVING RADIO CONNECTION QUALITY**

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**(57) ABSTRACT**

The invention relates to a method of improving radio connection (170) quality in a cellular radio network and a cellular radio network. The cellular radio network comprises a base station system (126) and subscriber terminals (150). Between the base station system (126) and the subscriber terminal (150) there is a bidirectional radio connection (170) using a directional antenna beam (304, 306). In the method, a direction of arrival (302A) of the antenna beam (304A) directed on the basis of a radio signal (304A) received uplink, transmitted by the subscriber terminal (150) is formed in the base station system (126). The base station system (126) transmits a radio signal (306) downlink to the subscriber terminal (150) in the direction of transmission (308) formed on the basis of the direction of arrival (302A). In forming the direction of transmission (308) a preknown number (L) of previously formed directions of arrival (402, 302C, 302B, 302A) are utilized. In accordance with the invention, when forming the direction of transmission (308) each previously formed direction of arrival (402, 302C, 302B, 302A) is weighted in inverse proportion to the temporal distance of the direction of arrival (402, 302C, 302B, 302A) from a known reference time instant (302A). The reference time instant is, for instance, the forming instant (302A) of the latest direction of arrival.

*Dir of arrival*

*Form dir of arrival*

**30 Claims, 4 Drawing Sheets**

